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June 23, 1995

Via Courier

Mr. William Caton
Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

Re: MM Docket No. 95-42

Dear Mr. Caton:

Transmitted herewith, on behalf of A.C. Nielsen Company, are Comments for consideration in the Notice of Proposed Rule Making, *In the Matter of Digital Data Transmissions Within the Video Portion of Television Broadcast Station Transmissions,* MM Docket No. 95-42.

Should any questions arise related to this matter, kindly contact the undersigned counsel at the direct line noted above, or Grier C. Raclin at (202) 408-7163.

Sincerely,

Susan H.R. Jones

Attachment

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Digital Data Transmissions Within	)	
the Video Portion of Television	)	**MM Docket No. 95-42**
Broadcast Station Transmissions	)	
	)	

TO: The Commission

COMMENTS OF A.C. NIELSEN COMPANY

A.C. NIELSEN COMPANY

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June 23, 1995

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SUMMARY

A.C. Nielsen Company ("Nielsen") is the largest provider of "ratings," or audience measurement services to members of the advertising, broadcast and cable industries. In providing its service, Nielsen uses, *inter alia*, Line 22 of the "active" video signal to carry data crucial to the ratings preparation process. "Subvideo" technologies are not feasible for use in ratings because they cannot survive the video compression to which network, syndicated and cable programming will soon be, if not already, subject. Given that the FCC and Congress have repeatedly determined that Nielsen's ratings are an important underpinning of the America's free broadcast system, Nielsen strongly urges the Commission to continue to authorize the use of Line 22 for its purposes.

Nielsen also recommends that the Commission reject calls to "standardize" data transmission systems, other than to require that data transmission not interfere with or "degrade" main channel broadcast programming. There has been no established need for standards; the marketplace can adequately protect against interfering uses; and the adoption of "standards" would discourage technological innovation by requiring that future data transmission systems conform to the current level of technological development.

Finally, Nielsen urges the Commission to adopt its proposal -- already adopted on a *de facto* basis -- not to require broadcasters to obtain prior FCC authorization before transmitting data that does not degrade main channel programming. The prior

authorization process does not serve any purpose that could not be better served by the commercial marketplace. Fears of interference can be better addressed by the FCC's adoption of simple requirements that: (i) data transmission be approved by the respective licensee; (ii) be invisible to viewers in the normal course; and (iii) otherwise degrade main channel programming.

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TO: The Commission

COMMENTS OF A.C. NIELSEN COMPANY

A.C. Nielsen Company ("Nielsen"), through its attorneys, hereby provides its comments on some of the issues posed in the *Notice of Proposed Rule Making* released in the above-referenced docket on May 2, 1995 (the "*NPRM*" or "*Notice*"). In support of these Comments, Nielsen states as follows:

I. BACKGROUND: THE "NIELSEN RATINGS"

1. Overview. Nielsen provides a variety of "rating" or audience measurement services to members of the advertising, broadcast and cable industries. The most commonly known of these services is the "national" broadcast ratings, whereby Nielsen estimates the size and demographic composition of audiences viewing

nationally-televised network and syndicated and cable network programs. In addition, Nielsen provides "advertising tracking" services, whereby Nielsen tracks the broadcast or cablecast of specified advertisements within programs.

2. Nielsen's national ratings are compiled from three principal sources of information, each of which must be very reliable. These are: 1) "Program Line-Up" Information, revealing the network or syndicated program being transmitted by a broadcast station at a specified time, which Nielsen obtains from its Automated Measurement of Line-up ("AMOL") System; (ii) "Metering" Information, revealing the channel to which each television receiver in a Nielsen Metered Household is tuned at the specified time, which Nielsen obtains from "meters" connected to the television receivers located in those households; and (iii) Demographic Information, revealing the age and gender of the persons watching the television receiver at the specified time, which Nielsen obtains from "People Meters" located in the Metered Households.

3. Program Line-Up Information. Nielsen's AMOL System provides Nielsen with Program Line-Up Information by imbedding Source Identification ("SID") Codes on Lines 20 or 22 of nationally distributed, advertising-supported broadcast programs at the time of their origination. The SID Codes are unique to each program and identify the program's originating source and the date and time of program origination. Nielsen's enhanced AMOL System, now in the initial stages of being deployed, is also capable of embedding separate identifying information for each link in a program's

distribution chain -- information which is increasingly being demanded by the advertising and programming industries to track the distribution and acceptance of rated programs. Once embedded, Nielsen's SID Codes are delivered with the program throughout its distribution, and eventually to local broadcast stations (whether network affiliates or independents) and onto viewers' homes. Nielsen's SID Codes cannot be seen by viewers because the Codes are transmitted either in Line 20 within the Vertical Blanking Interval ("VBI"), or in Line 22, the first line of active video, in either case within the "overscan" area of the television picture. While invisible to viewers, the Codes are able to be decoded and "read" for the purpose of verifying the broadcast of a program, and thus preparing ratings, at the time of the program's transmission into Metered Households.

4. The use of Lines 20 and 22 to carry Nielsen's SID Codes has been consistently authorized by the FCC for over *26 years*. The Commission first authorized the use of the VBI to carry source identification codes in 1970, when it determined that the transmission of SID Codes in the "active video" signal served an "important service . . . without which [a station's] viable operation . . would be impossible."[1/] In 1981, in its *Report and Order* in BC Doc. No. 78-308,[2/] the Commission authorized the transmission of Nielsen's SID codes on Line 21 of the VBI, having found that the

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1/ *Report and Order* in Doc. No. 18605 (Amendment of Part 73; Section 73.682(a) of the Commission's Rules), 22 F.C.C. 536, 18 R.R. 1776, 1787 (1970).

2/ Radio Broadcast Services; Transmission of Program Related Signals in the Vertical Blanking Interval, FCC 81-334, 46 Fed. Reg. 40024 (July 29, 1981).

"recovery of SID signal is accurate and extremely reliable," and that the record established that "there is virtually no potential for program degradation by the proposed SID transmissions."[3/] The Commission authorized the transmission of Nielsen's AMOL codes on Line 22 of the Active Video Signal on a temporary basis in 1989,[4/] noting that the codes were an "integral part of the associated program" and that ratings were "of interest to virtually every broadcaster,"[5/] and that Nielsen's use of Line 22 " will not visibly degrade the picture presented to viewers."[6/] In 1990, the Commission extended Nielsen's Line 22 authorization "until such time as the Commission issues a decision resolving Nielsen's [March 15, 1995] request for permanent Line 22 authority,"[7/] which the Commission has proposed to do in this proceeding. *NPRM* at ¶ 16.

5. Metering Information. Nielsen historically has obtained Metering Information -- identifying the television or cable channel being watched in a household at the relevant time -- from meters connected to the television receivers located in the household. Historically, this has been accomplished by identifying the frequency of the channel to which a television receiver was tuned at the relevant time. However, with

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3/ *Notice of Proposed Rule Making* in BC Doc. 78-308, 43 Fed. Reg. 49331, 49332 , released October 20, 1978, *and see Public Notice*, FCC 70-387, 22 F.C.C.2d 779, 780 (1970).

4/ Letter from Roy J. Stewart, Chief, Mass Media Bureau, Federal Communications Commission, to Grier C. Raclin (November 22, 1989) (the "Nielsen Authorization").

5/ *Id.* at 2.

6/ *Id.* at 3.

7/ Letter from Roy J. Stewart, Chief, Mass Media Bureau, Federal Communications Commission, to Grier C. Raclin (May 1, 1990).

the advent and growth of multi-media inputs into the home television receivers -- each of which might be displayed on a single frequency or "channel" of the receiver -- the task of monitoring has become dramatically more difficult. For example, a homeowner might have his or her receiver tuned to "Channel 3," but in fact not be viewing the programming of the local station that broadcasts on "Channel 3," instead viewing other material (*e.g.*, cable or direct-to-home satellite programming from set-top converters; videotape recordings; video games; home movies; etc.) that the homeowner had arranged to have *displayed* on "Channel 3" of his or her receiver. To monitor viewing patterns with traditional technology in a multi-media environment, Nielsen must "meter" *each* and *every* potential input into the television receiver -- an increasingly difficult task as the number and variety of media input continues to grow and equipment technology becomes more sophisticated and diverse.

6. To maintain the accuracy of its ratings in a multi-media environment, and to address the complications resulting from the growing use of video compression systems (*see* text *infra*), Nielsen is developing, *inter alia*, proprietary "signal-encoding" technology that will rely upon "subvideo" transmission to monitor program viewing "passively" (*e.g.*, without direct connection to the television receiver), *regardless* of the "channel" on which that programming is displayed in the monitored home. In other words, instead of monitoring the *channel* being tuned and extrapolating the program being received from the Program Line-Up Information, Nielsen's "signal-encoding"

technology will allow it to monitor the actual *program* being viewed *without* the need to determine the channel to which the receiver is tuned to allow that viewing.[8/] In this and other ways, Nielsen has taken the lead in developing innovative approaches to solve technological problems, constantly updating its information gathering methodologies to anticipate and address changes in program-delivery systems, and in meeting the demands of the broadcast, cable or advertising industries or viewing public.[9/]

II. THE IMPORTANCE OF RATINGS AND SID CODES

7. Nielsen's ratings are an important underpinning of the advertiser-supported broadcast and cable program industries, both of which utilize ratings to judge the acceptance of broadcast and cable program offerings among viewers, and to establish audiences "delivered" to the advertiser through their viewing of the program and advertisements. Advertisers use Nielsen's services to allocate their advertising expenditures. Producers of broadcast and cable programming (virtually every major cable program provider is a subscriber to Nielsen's ratings) use ratings to evaluate the

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[8/] This new technology is only in a developmental stage at this time (*e.g.*, not yet available for commercial deployment); and, due to compression, will likely not have data handling capacity sufficient to provide Nielsen with needed Program Line-Up information; and still must be accepted by the broadcast, cable and advertising industries.

[9/] When discussing Nielsen's contribution into the technical innovation of monitoring broadcast television, a recent article appearing in *Multichannel News*, notes:

> Within this new technical environment, Nielsen's challenge is to report accurately what program is being tuned to on a particular channel, and it says signal encoding is the answer. "Its a great idea," said Howard Shimmel, Vice President of audience research for MTV Networks, "We've needed for years in the industry, especially the cable industry."

Moss, *Multichannel News*, NIELSEN SET TO FIELD TEST ITS NEW METER TECHNOLOGY, June 19, 1995, at 9. See Exhibit A attached hereto.

acceptance of programs when making creative programming decisions. Even the Commission itself relies upon Nielsen's ratings in connection with, *inter alia*, the enforcement of the FCC's Rules and Regulations.[10]

8. Both Congress and the FCC have long recognized that the Nielsen ratings, and the integrity of those ratings, are important underpinnings of the advertising, broadcast and cable industries. In the Cable Act, for example, Congress determined that to allow a cable system to delete or reposition a broadcast station's programming during periods that the station is subject to ratings analysis, could greatly undermine the integrity of the "ratings" of that station, and it therefore prohibited such changes during those periods.[11] Accordingly, the Commission has adopted regulations

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[10] Letter from Scott Roberts, Senior Economist, Mass Media Bureau, to Lawrence Laskey, Assistant General Counsel of Nielsen, requesting Nielsen's ratings information for use in connection with Prime Time Access Rule; territorial exclusivity requirements and signal carriage requirements, (June 10, 1994), attached herein as Exhibit B.

[11] 47 U.S.C. § 534(b)(9); and *see* House Committee on Energy and Commerce, H.R. Rep. No. 623, 102d Cong., 2nd Sess. (1992) at 95("House Report"); and Senate Committee on Commerce, Science, and Transportation, S. Rep. No. 92, 102nd Cong., 1st Sess. (1991) at 86 ("Senate Report"). Both Congress and the FCC have recognized the importance of maintaining and promoting the system of advertiser-supported (*i.e.*, "free" to viewers) broadcasting as a national interest. Specifically, Congress has found that

> [b]roadcast television programming is supported by advertising revenues. Such programming is free to those who own television sets and do not require cable transmission to receive broadcast signals. There is substantial governmental interest in promoting the continued availability of such free television programming, especially for viewers who are unable to afford other means of receiving programming...

Cable Television Consumer Protection and Competition Act of 1992, Pub.L. No. 102-385, 106 Stat. 1460 (Oct. 5, 1992), at § 2(a)(12), 106 Stat. 1461. Similarly, the House Report explained that the continued viability of advertiser-supported broadcasting promoted long-standing policies of Congress as reflected in the Communications Act

> Broadcasters who lose substantial portions of their audience will be unable to continue to provide local public service programming, and may be forced to discontinue service altogether. That result would not only lead to diminished diversity in programming, but also to reduced competition in the local video market and the strengthening of a cable systems' dominant position in providing video services, contrary to the strong governmental interest in fostering active competition

House Report at 64.

implementing this prohibition. *See Report and Order, In the Matter of Implementation of the Cable Television Consumer Protection and Competition Act of 1992 Broadcast Signal Carriage Issues*, MM Docket No. 92-259, 8 FCC Rcd. 2965, (1993) at ¶ 109.

9. The Commission similarly has recognized that Nielsen's ratings, and the transmission of SID Codes in support of ratings, are in the public interest because of their importance to the broadcast and cable industries. In *Permitting Transmission of Program-Related Signals in the Vertical Blanking Interval of the Standard Television Signal*, 43 Fed. Reg. 49331, 49333 (Oct. 23, 1978), for example, the Commission found that SID code transmissions were in the public interest (*quoting Program Identification Patterns*, Docket No. 19314, 43 F.C.C. 2d 927, 944 (1973)); in *TV Visual Transmissions for Program Identification (Public Notice)*, 22 F.C.C. 2d 779, 780 (1970), the Commission has stated that the use of Nielsen's SID Codes is "essential to [a network's] efficient operation," and in its Report and Order in *TV Visual Transmissions for Program Identification*, 22 F.C.C. 2d 536, 545 (1970) the Commission found the Codes and Nielsen's Ratings are

> important . . . to many entities involved in producing the programs which [a] station broadcasts, and without which [a station's] viable operation, . . . would be impossible

and that ratings are in the public interest because they

> convey indirect benefits [to the public] by making the operation of broadcast stations more convenient and economical, [and by] making possible a more adequate financial base for the provision of basic broadcasting service.

Id.

10. In furtherance of these goals, as indicated above, the Commission has for over 26 years authorized the transmission by broadcast stations of SID Codes in connection with the preparation of ratings.[12/] In its *In re Radio Broadcast Services Order*, 46 Fed. Reg. 40024 (Aug. 6, 1981), the Commission specifically authorized the use of Line 20 of the VBI to carry SID Codes "so that faster and more accurate comparative program popularity ratings could be obtained," 46 Fed. Reg. at 40024, and stated at the time that "we consider the transmission of the SID signal to be in the public interest in view of the program identification function it serves." *Id.* Similarly, when the Commission began authorizing the transmission of SID Codes on Line 22 in the active video signal for program identification purposes in 1985,[13/] it specifically found that SID Codes were beneficial and contributed to efficient broadcast operations, *TV Program Identification Public Notice, supra*, 22 F.C.C. 2d at 779-80; *see also* Nielsen Authorization at 2. In sum, when authorizing the use of Line 22 for SID Code transmission, the Commission has repeatedly determined that those signals, and the ratings which they generate, are important to the broadcast industry and the public. *See, e.g.,* Report and Order, in *TV Visual Transmissions for Program Identification*, 22 F.C.C. 2d 536, 545 (1970).

12/ *See, e.g., Report and Order* in *TV Visual Transmissions for Program Identification*, 22 F.C.C. 2d 536 (1970).

13/ Letter from James C. McKinney, Chief, Mass Media Bureau, Federal Communications Commission, to Burton Greenberg (July 18, 1985) (the "Telescan Authorization"). The Commission authorized Nielsen's use of Line 22 for the transmission of AMOL Codes in 1989.

Nielsen's authority to use Line 22 to transmit AMOL SID Codes was issued on a "temporary" basis because the Commission wanted to evaluate whether Nielsen's usage of Line 22 would interfere with usage by other parties. After months of Nielsen's usage of Line 22 without a single instance of its interfering with other users, Nielsen petitioned the Commission for "permanent" authority to use Line 22. That request has been pending with the Commission since it was filed in 1990, and is to be addressed by the Commission in the course of this proceeding.

III. THE *NPRM*

11. In the *NPRM*, the Commission raised three general areas of inquiry on which Nielsen seeks to provide comment herein:

(i) Whether Nielsen's, and other parties' authorizations to use Line 22 of the "active" broadcast signal to transmit digital data, should be "phased out" in light of the apparent availability of subvideo transmission technologies that might be utilized. Indeed, the Commission specifically noted that it would "determine whether Nielsen's request for permanent authority [to use Line 22] should be granted";

(ii) Whether the Commission should adopt standards to regulate the characteristics of subvideo data transmission technologies and methodologies; and

(iii) Whether prior Commission approval should be required to transmit digital data in the "active" portion of the video signal.

IV. A.C. NIELSEN MUST HAVE CONTINUED ACCESS TO LINE 22 IN ORDER TO PREPARE AND PROVIDE RATINGS

12. In the *Notice*, the Commission questioned the continued need to authorize the use of Line 22 to transmit data in light of the current or proposed existence of many "subvideo" technologies that also might be used for these data transmission purposes. Specifically, the Commission requested comment on whether Line 22 authorizations and other "overscan-reliant" technologies should be "phased-out" in favor of what appeared to be more subtle, "less intrusive methods" of data transmission, and requested comment on a timetable for phasing out use of such systems, should the Commission conclude that a "phase-out" was appropriate. *NPRM* at ¶ 30. Additionally, the Commission stated that it would address Nielsen's long-pending

"Request For Permissive Authority" to transmit AMOL SID Codes on Line 22 in light of the apparent availability of various subvideo transmission technologies. *Id.* at ¶ 16. *See* note 5, *supra.*

13. The Commission appeared to infer in the *NPRM* that it deems Line 22 and other "overscan reliant" technologies equivalent to the "subvideo" technologies described in the *Notice* for the purpose of data communications; *i.e.*, that Nielsen and other Line 22 users might easily use a subvideo data transmission methodology to fulfill functions that overscan technologies previously had fulfilled. It is crucial for the Commission to appreciate, however, that *subvideo transmission technologies, such as those described in the Notice, are not viable data transmission means for data -- such as Nielsen's AMOL SID Codes -- that must be transmitted through video compression systems.*

14. As indicated above, to provide ratings, Nielsen must have very reliable Program Line-Up Information to identify a program transmitted over a specific television broadcast station at a specific time. This identifying information must be inserted into the programming prior to its distribution to assure proper identification of the programs at the time of their broadcast. Consequently, this information is inserted in the program before it is initially transmitted by broadcast licensees, and is delivered to broadcast stations, almost always through satellite interconnection.

15. The difficulty in using subvideo technologies in connection with Nielsen's attempts to gather Program Line-Up Information arises because, as the Commission is

well aware, many programmers and satellite communications carriers are using, or will soon use, video "compression" technologies in order to increase the amount of programming that can be transmitted over their systems.[14/] Telemundo, Univision, Direct TV, and Primestar are already delivering compressed video signals via satellite, and virtually every other major programmer and satellite carrier has plans to do so as well. Digital video compression will soon be widely used by cable operators, satellite carriers and telephone companies (with appropriate authorization) to deliver programming to subscribers.

16. Most "subvideo" data transmissions will be ignored or deleted by compression systems because the algorithms used to accomplish compression intentionally delete information that is not perceptible to the human eye. *See* note 14, *supra.* Indeed, it is arguably *imperative* that compression systems *not* transmit subvideo data because, by its nature, subvideo data signals are imperceptible and their carriage would reduce or eliminate the effectiveness of video compression altogether. Given the imperceptibility, and because subvideo data is not required to reproduce the picture at the receive site, video compression system algorithms purposely delete, or fail to digitize and carry, subvideo data transmissions occurring within the active video signal.

17. Subvideo technologies are thus unusable as a practical matter to provide Program Line-Up Information to Nielsen because they do not survive the compression

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[14/] Video "compression" is accomplished by reviewing and "digitizing" the information incorporated into the initial signal. "Compression" is accomplished by the use of algorithims which transmit only that portion of the original signal that is perceptible by the human eye, and by deleting repetitive data as well as information that is unnecessary to reproduce the video at the receive location.

that SID Codes must endure during their transmission to local broadcast stations. On the other hand, SID Codes embedded into Lines 20 and 22 of programming *can* survive compression because their carriage is not inconsistent with, or otherwise disruptive to, compression methodologies. Because satellite carriers are required to carry close captioning information embedded in Line 21 of the VBI, they incorporate in their algorithms the ability to pass or separate, transmit and reinsert, close captioning data. *See* 47 C.F.R. § 73.682(a)(22)(i). Given this legal necessity, Nielsen is working closly with compression system designers and satellite carriers to devise a transmission methodology that would achieve and assure reliable carriage of Nielsen's SID Codes on Lines 20 and 22 based upon the design parameters used to assure the carriage of close captioning on Line 21. Thus, Nielsen is confident that its Line 20 and 22 data transmissions will survive video compression. It is crucially important that Nielsen continue to be allowed to use Line 22 in this fashion and that its 1990 Request for Permissive Authority to transmit AMOL SID Codes on Line 22 be granted (or determined to be unnecessary -- *See* ¶ 16, *infra*). Nielsen's authority to use Lines 20 and 22 must be continued to assure that its SID Codes can be carried, and its ratings can be provided, in a compressed environment.[15/]

[15/] As the Commission has determined previously and repeatedly, *Nielsen's use of Line 22 will not cause any degradation or adverse affect on the main video signal or other parties transmitting data over broadcast frequencies. See* text at ¶ 4, *supra*. Indeed, over *twenty-six years* of Nielsen's use of Line 20, and more than *six years* of Nielsen's use of Line 22, has failed to reveal a *single incidence* where another data transmission system or the main-channel video programming was "overwritten," "degraded" or otherwise adversely affected by Nielsen's data transmissions.

Nor is there any legitimate reason to expect that Nielsen's use of Lines 20 or 22, even if concurrent with "active video" transmission using alternative data transmissions systems, will lead to any degradation of the main video signal. There simply is no

18. If, notwithstanding the information provided above, the Commission were to decide to "phase-out" Line 22 authorizations, Nielsen and other users of Line 22 must be given sufficient time -- at least five years -- to develop alternative transmission technologies that meet their requirements, and must be guaranteed access to the subvideo environment to transmit their data once the technologies have been developed. As indicated above, the FCC and Congress already have determined that Nielsen's ratings serve a crucial role in support of the free American broadcast system and the broadcast, cable and advertising industries, and Nielsen's ability to transmit on Line 22 the SID Codes required to prepare these ratings must not be discarded without accommodating Nielsen's transmission needs. Thus, in the event the Commission require Nielsen to cease use of Line 22 by a date certain, that date cannot be prior to five years from the date the Commission *Order* in this proceeding becomes final, and must provide that Nielsen will have *primary* rights to transmit AMOL Codes via subvideo, or superior, means at the end of such period.

(..continued)
technologically-sound reason to expect that even the concurrent use of varied data transmission systems would separately or collectively cause interference to main-channel programming

Similarly, the implementation of new technologies, such as "picture-in-picture" that do not incorporate "overscan" areas will not result in Nielsen's AMOL code transmission degrading main-channel programming. As set forth in the affidavit of Paul Kempter, Exhibit C, attached hereto, major manufacturers of television receivers incorporating "picture-in-picture" features, *electronically "crop" the video picture to delete lines 1-22, thus effectively* ***creating*** *an overscan area.* Consequently, Nielsen's Line 22 transmission will remain invisible even in receivers not incorporating physically distinct "overscan" areas.

V. GOVERNMENTAL STANDARDIZATION OF ANCILLARY DATA TRANSMISSIONS WITHIN THE "ACTIVE" VIDEO PORTION OF THE BROADCAST SIGNAL IS UNNECESSARY AND WOULD INHIBIT TECHNOLOGICAL INNOVATION.

19. In its *NPRM*, the Commission seeks guidance on whether it should adopt a comprehensive set of rules defining and regulating permissible transmissions within the "active" video portion of the broadcast signal, or whether it should continue to authorize such transmissions on an *ad hoc* basis. Nielsen strongly opposes the adoption of any Commission-dictated standard, and urges the Commission to continue to authorize transmissions within the active video signal as they are developed and adopted *de facto* by the industry. The Commission's current procedures adequately protect the active video portion of the broadcast signal from degradation; ensure compatibility among co-users of the ancillary portion; and promote, rather than inhibit, innovative technological development for uses within this portion of the available spectrum.

A. Standardization Is Not Required To Protect Broadcasts From Degradation.

20. The Commission notes in the *NPRM* that industry-wide technological standards would seek to address "picture or sound degradation" that might be caused by data carried within the "active" video signal. *NPRM* at ¶ 38. Although Nielsen acknowledges the public's and the Commission's interests in protecting sound and video transmissions from degradation, the adoption of standards is unnecessary to ensure such protection.

21. As indicated above, for over *26 years* Nielsen has transmitted AMOL Codes in the Vertical Blanking Interval ("VBI"), and for the past *6 years* has transmitted data in Line 22 of the "active" video signal, without a *single instance* of Nielsen's encoding or transmissions causing video or sound degradation to associated main-channel programming. Indeed, the marketplace -- without any Commission edict -- *requires* that Nielsen ensure "non-degradation" of the active video signal. Broadcasters simply will not subscribe to Nielsen's monitoring services without confidence and assurance that the visible and audio portions of their broadcasts will be free from any degradation caused by the transmission of Nielsen's SID Codes, and the Commission can fairly infer that other data transmissions will be held to the same "standards."

22. The Commission traditionally has relied upon the marketplace to ensure preservation of signal quality and compatibility of technologies rather than impose standards through regulation. In the Second Report and Order, in *the Matter of the Use*

of Subcarrier Frequencies in the Aural Baseband of Television Transmitters, Docket No. 21323, 55 R.R.2d 1642 (1984) ("*Second Report and Order*"), for example, the Commission declined to impose specific standards for permissible uses of the television aural baseband to ensure television receiver compatibility, noting that "strong marketplace incentive exists to maximize the quality of service and the rules need not set detailed specifications." *Id.* at ¶ 15. In reaching this conclusion, the Commission reasoned that "technology should not be restrained by earlier choices by manufacturers," and that "any approach to ensuring compatibility should not impede the opportunity for marketplace advances in technology." *Id.* at ¶ 9.

23. Similarly, in the *Inquiry Into The Need For A Universal Encryption Standard For Satellite Cable Programming*, 5 F.C.C. Rcd. 2710 (1990), the Commission declined to promulgate a universal standard for encryption of satellite cable programming intended for private viewing, concluding that such a standard would not serve the public interest. In affirming its earlier conclusions, the Commission concluded that a universal standard for encryption technology would stifle development of competitive or improved encryption techniques, stating that "the *market* had settled on the Videocipher II system as a *de facto* standard . . . and a mandatory standard would limit the incentives for innovation in encryption technology." *Id.* at 2710 (*emphasis supplied*).

24. If the Commission is not confident in the marketplace's ability to control and prohibit degradation of main-channel programming in this fashion, the FCC could

easily address this issue by adopting Rules setting forth the non-degradation requirements now contained in the Commission's Line 22 Authorizations. Specifically, the Commission could simply require that Line 22, "subvideo" and other similar data transmission by broadcasts must not degrade, or be visible to viewers of, main-channel programming in the normal course of viewing, without specifying the exact manner the industry must use to meet their non-degradation requirement.[16/] Such a requirement would allow the Commission to correct interference problems that actually occur, but would not require the Commission to become enmeshed in resolving issues that are best left to the marketplace to address.

B. The Adoption of Governmental Standards Would Inhibit Technological Innovation.

25. The variety of the technologies that might be used to transmit data in the active video signal, only some of which were noted by the Commission in the *NPRM*, demonstrate that this segment of the communications industry is characterized by technological innovation. Without a requirement to satisfy certain technical parameters, the industry has been free to develop alternative transmission technologies with the sole restriction being that the use of such technologies not degrade the active video signal and keep the bandwidth and power within the authorized limits. This freedom has led to unsurpassed technological development, resulting in a multitude of

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[16/] Of course, the Commission could continue to require that transmission bandwidth and powers must be within authorized limits. 73 C.F.R. § 1560(c).

alternative technologies and capabilities, each directed toward a specific customer base or proposed use.

26. Indeed, each of the transmission technologies noted by the Commission in the *NPRM* was created to address and satisfy the unique need of specific users. For example, the subvideo technology developed by "WavePhore" might well serve the needs of those attempting to transmit large amounts of computer data from a broadcast station to local users. This need is distinct from, and thus a WavePhore-type technology would fail to serve, Nielsen's need to transmit lesser amounts of data long distances through compressed satellite transmissions. Because of this requirement, as indicated in the text at ¶ 17 *supra,* Nielsen is developing an alternative subvideo transmission methodology. But just as WavePhore's approach might be of no use to Nielsen, Nielsen's alternative methodology, which has been customized for its needs and demands, similarly might not satisfy the needs of WavePhore's proposed customers because its capacity may be far more limited than WavePhore's is claimed to be. The ultimate point is that neither WavePhore's nor Nielsen's "subvideo" technologies, nor anyone else's, should serve as a "model" to which transmission system designers must adhere because each will be designed to serve *differing* needs and will be subject to *differing* limitations, market demands and requirements. Such a model or the adoption of such a "standard" *per se* will inhibit the development of alternatives that might more efficiently, more effectively or otherwise, better serve the public's needs.

27. By their nature, any Commission-dictated restriction as to the type and format of data transmission based upon then-current technology would fail to meet the needs and demands of the marketplace by imposing *retrospective* limitations on as-yet-unconceived, or developing technologies. Regardless of the "cutting-edge nature" of the technology chosen as the "standard" model, it is reasonable to assume that entirely *new* approaches, ideas or technologies would soon be proposed that would render the "model" obsolete.[12/] In contrast to the innovative data transmission technologies that have flourished in that segment of the industry, standards drawn from today's technology cannot predict or anticipate the growth or development of new capabilities, and by their nature will restrict innovation that otherwise might serve the public's changing needs.

28. In sum, in the absence of any evidence that existing data transmissions have caused discernible degradation to the active video portion of a broadcast television signal, the Commission should continue its present reliance upon market forces to assure non-degradation. The marketplace will both ensure non-degradation of broadcasts and encourage technical innovation. As was the case with aural baseband usage, satellite transmissions and cellular telephone designs, imposing standards on the use of the active video signal based upon current uses and users would "impede opportunity for marketplace advances in technology." Second Report and Order, at ¶ 9.

[12/] Just within the last few days, the *Wall Street Journal* has reported unforeseen developments in relevant technology. *See* Exhibit D, attached hereto. Ritter, *Wall Street Journal*, WAVELET THEORY SPIFFS UP VIDEO IN COMPUTERS, May 25, 1995, at B1; Bulkeley, *Wall Street Journal*, LITTLE KNOWN FIRM INTRODUCES PRODUCT TO MOVE DATA FAST, June 15, 1995, at B1.